IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1. This sheet, which includes

Fig. 1, replaces the original sheet including Fig. 1.

Attachment: Replacement Sheet

<u>REMARKS</u>

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-16 are currently pending. Claims 1-16 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, the drawings were objected to under 37 C.F.R. § 1.83(a) as failing to show the home agent (HA) as described in the specification at page 9, lines 2 and 13; the specification was objected to as containing informalities; the title of the invention was objected to as being non-descriptive of the claimed invention; Claims 3, 9, 11-13, and 15 were objected to as containing informalities; Claim 16 was rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter; and Claims 1-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,719,861 to <u>Okanoue</u> (hereinafter "the '861 patent") in view of U.S. Patent No. 6,304,556 to <u>Haas</u> (hereinafter "the '556 patent").

Regarding the objection to the drawings, Figure 1 has been amended to illustrate the home agent (HA) as disclosed at page 9, lines 2 and 13 of the specification. Accordingly, the objection to the drawings is believed to have been overcome.

Regarding the objections to the specification, the specification has been amended to address the informalities noted by the Office Action. In particular, page 78, line 32 of the specification has been amended to recite "ping response." Further, the embedded hyperlinks at page 1, line 18 and page 1, line 35 to page 2, line 1 of the specification have been amended in a manner such that a live web link will not result from the URLs being interpreted as valid HTML code. Accordingly, the objections to the specification are believed to have been overcome.

Regarding the objection to the title, the title of the invention has been amended to read

"NODE SEARCH METHOD FOR SEARCHING FOR A SERVICE NODE, NODE,

MOBILE COMMUNICATION SYSTEM, AND COMPUTER PROGRAM PRODUCT."

Accordingly, the objection to the title is believed to have been overcome.

Regarding the objections to Claims 3, 12, 13, and 15, those claims have been

amended to address the informalities noted in the Office Action. Accordingly, the objections

to Claims 3, 12, 13, and 15 are believed to have been overcome.

Applicants respectfully traverse the objections to Claims 9 and 11. Claims 9 and 11

recite in part "at least one of the node search packet, the node notice packet, and the node

notice request packet." The Office Action asserts that those claims should be amended to

recite "or the node notice request packet." However, it is respectfully submitted that what

follows the recitation of "at least one of" is a set or group that must be defined in conjunctive

form. Thus, the recitation of "and the node notice request packet" is proper.

Regarding the rejection of Claim 16 under 35 U.S.C. § 101, Claim 16 has been

amended to be directed to a computer-readable medium, as suggested by the Office Action.

Accordingly, it is respectfully submitted that the rejection of Claim 16 under 35 U.S.C. § 101

is rendered moot by the present amendment to that claim.

Amended Claim 1 is directed to a node search method for searching for a service node

for providing a service to a mobile node, in a mobile communication system including a

plurality of service nodes and the mobile node, each of the service nodes and the mobile node

having a node storage unit configured to store addresses of service nodes, the node search

method comprising:

> transmitting a node search packet for searching for the service
> node from a search node, which searches for the service node,
> to an address stored in the node storage unit of the search node;

> returning a node notice packet from at least one of a search
> packet reception node, which has received the node search

packet, and a peripheral node other than the search packet reception node, to the search node, in response to the node search packet;

detecting the service node based on the returned node notice packet, by the search node;

updating the node storage unit of the search node based on the service node detected by the search node; and

transmitting to the detected service node, by the search node, data for investigating node information concerning the detected service node, the data for investigating node information including a request for a delay value and a number of hops in a packet transmission between the search node and the detected service node.

Regarding the rejection of Claim 1 under 35 U.S.C. § 103(a), the outstanding Office Action cites the '861 patent for teaching all of the limitations of Claim 1, except a mobile communication system or mobile nodes. The Office Action, however, cites the '556 patent for such a teaching.

The '861 patent is directed to an automatic route determination method. In particular, the '861 patent discloses a mesh-type network including nodes N1-N4 each having at least a routing protocol, wherein adjacent nodes N1 and N2 are connected through a simple element R1, the adjacent nodes N2 and N4 are connected through two simple elements R3 and R4, and the adjacent nodes N4 and N5 are connected through a simple element R5.[1] As disclosed by the '861 patent, simple elements R1-R5 are network elements having no routing protocol, such as a repeater or a bridge.[2] Regarding the determination of a route between a source node and a destination simple element, the '861 patent discloses that the source node broadcasts a TARP request including the ID of the destination simple element and then waits for its response. Each of the '861 nodes, receiving the address request signal, further broadcasts the TARP request when neither managing nor normally communicating with the destination simple element, or sends a TARP response when the node is managing or normally

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[1] '861 patent, column 3, lines 40-46, also see Figure 1.
[2] '861 patent, column 3, lines 46-48.

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communicating with the destination simple element. The '861 patent discloses that when the response is received from another node, the source node determines the destination address of the destination network element.[3]

However, it is respectfully submitted that the '861 patent fails to disclose <u>transmitting to the detected service node, by the search node, data for investigating node information concerning the detected service node, the data for investigating node information including a request for a delay value and a number of hops in a packet transmission between the search node and the detected service node</u>. Rather, the '861 patent merely discusses determining, based on a TARP response, a shortest route between a source node and a destination simple element in a network where broadcasting is applicable.

Further, it is respectfully submitted that the '566 patent fails to remedy the deficiencies of the '861 patent, as discussed above. The '566 patent is directed to routing and mobility management protocols for ad-hoc networks. Further, the '566 patent discloses a routing zone that is defined in hops (*i.e.*, distance between nodes).[4] However, it is respectfully submitted that the '566 patent does not disclose <u>transmitting to the detected service node, by the search node, data for investigating node information concerning the detected service node, the data for investigating node information including a request for a delay value and a number of hops in a packet transmission between the search node and the detected service node</u>.

The claimed invention is configured to search for an unknown node by use of a known node and to obtain information (*e.g.*, the delay value and the number of hops) to determine whether to use the detected unknown node (*i.e.*, the detected service node) in a network even if broadcasting is <u>not</u> applicable.

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[3] '861 patent, see Abstract, column 4, lines 4-42.
[4] '556 patent, see Abstract and column 7, line 35 to column 8, line 20.

Thus, no matter how the teachings of the '861 and '566 patents are combined, the combination does not teach or suggest <u>transmitting to the detected service node, by the search node, data for investigating node information concerning the detected service node, the data for investigating node information including a request for a delay value and a number of hops in a packet transmission between the search node and the detected service node</u>.

Accordingly, it is respectfully submitted that the rejection of Claim 1 is rendered moot by the present amendment to Claim 1.
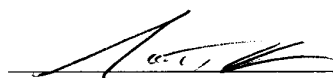
Amended Claims 2, 15, and 16 recite limitations analogous to the limitations recited in Claim 1, although of differing class and/or scope. Moreover, Claims 2, 15, and 16 have been amended in a manner analogous to the amendments to Claim 1. Accordingly, for reasons analogous to the reasons stated above for the patentability of Claim 1, it is respectfully submitted that Claims 2, 15, and 16 (and all associated dependent claims) patentably define over any proper combination of the '861 and '566 patents.

Thus, it is respectfully submitted that independent Claims 1, 2, 15, and 16 (and all associated dependent claims) patentably define over any proper combination of the '861 and '566 patents.

Consequently, in view of the present amendment and in light of the above discussion,

the outstanding grounds for rejection are believed to have been overcome. The application as

amended herewith is believed to be in condition for formal allowance. An early and

favorable action to that effect is respectfully requested.

Respectfully submitted,

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